

WHAT IS CLAIMED IS:

1 1. A sealing system for a rotating machine having a
2 stationary element and a drive element rotationally
3 connected to said stationary element, the sealing system
4 comprising:

5 a plate comprising a bearing surface, the plate
6 being connected to one of said drive element and said
7 stationary element; and

8 a sealing assembly comprising a resilient bellows
9 and a bearing surface, the bellows providing a force
10 which causes the bearing surface of the sealing assembly
11 to bear on the bearing surface of the plate to form a
12 dynamic seal.

1 2. The sealing system of claim 1, wherein the
2 sealing assembly further comprises a thrust plate
3 attached to the resilient bellows, and wherein the thrust
4 plate provides said bearing surface of the sealing
5 assembly.

1 3. The sealing system of claim 2, wherein the
2 resilient bellows comprises a collar to which the thrust
3 plate is attached.

1 4. The sealing system of claim 3, wherein the
2 sealing assembly further comprises a static sealing
3 element, the static sealing element being disposed within

4 a gap provided between the collar and the thrust plate.

1 5. The sealing system of claim 1, further
2 comprising a mounting element which connects said plate
3 to said one of said drive and stationary elements.

1 6. The sealing system of claim 1, wherein the
2 resilient bellows comprises at least one corrugation.

1 7. The sealing system of claim 1, wherein at least
2 one of said plate and said thrust plate comprises
3 graphite which provides a sealing and lubricating layer
4 to the dynamic seal.

1 8. The sealing system of claim 1, further including
2 a driven element operatively associated with said drive
3 element.

1 9. The sealing system of claim 8, wherein the
2 driven element comprises an impeller.

1 10. The sealing system of claim 8, wherein the
2 driven element comprises a propeller.

1 11. The sealing system of claim 8, wherein the
2 driven element comprises a mixing bar.

1 12. The sealing system of claim 1, further

2 comprising a seal chamber which at least partially
3 encloses said sealing assembly.

1 13. The sealing system of claim 12, wherein the
2 seal chamber is defined by the stationary element.

1 14. The sealing system of claim 12, further
2 comprising a seal gland which closes an area of the seal
3 chamber.

1 15. A sealing system for a rotating machine having
2 a stationary element and a drive element rotationally
3 connected to said stationary element, the sealing system
4 comprising:

5 a drive plate comprising a bearing surface, the
6 first plate being rigidly connected to said drive
7 element;

8 a stationary plate comprising a bearing surface, the
9 second plate being rigidly connected to said stationary
10 element; and

11 a sealing assembly comprising a resilient bellows, a
12 first bearing surface and a second bearing surface, the
13 bellows providing a force which causes the first bearing
14 surface of the sealing assembly to bear on the bearing
15 surface of the drive plate forming a first dynamic seal
16 and causes the second bearing surface of the sealing
17 assembly to bear on the bearing surface of the stationary
18 plate forming a second dynamic seal.

28 the stationary plate to the stationary element;
29 wherein the first and second thrust plates further
30 comprise graphite, and wherein the force of the bellows
31 causes the first bearing surface of the sealing assembly
32 to bear on the bearing surface of the drive plate forming
33 a first dynamic seal comprising a first sealing and
34 lubricating graphite layer, and the force of the bellows
35 causes the second bearing surface of the sealing assembly
36 to bear on the bearing surface of the stationary plate
37 forming a second dynamic seal comprising a second sealing
38 and lubricating graphite layer.